



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,114	05/18/2006	Henrik Bagger Olsen	GRP-0139	3620

23413 7590 02/07/2008  
CANTOR COLBURN, LLP  
20 Church Street  
22nd Floor  
Hartford, CT 06103

EXAMINER
----------

PENDLETON, DIONNE

ART UNIT	PAPER NUMBER
----------	--------------

2627

MAIL DATE	DELIVERY MODE
-----------	---------------

02/07/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,114	<b>Applicant(s)</b> OLSEN ET AL.	
	<b>Examiner</b> Dionne H. Pendleton	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) n/a is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-19 and 21-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baumann (US 6,807,445)** in view of **Reipur (US 6,075,339)**.

#### **Regarding claim 1,**

In Figure 2, Baumann teaches a hearing prosthesis comprising a microphone (14) adapted to generate an input signal in response to received acoustic signals, a data processor (28) adapted to process the input signal in accordance with a predetermined processing algorithm to generate a processed output signal (see column 7, lines 10-14), an output transducer (column 9, lines 55-58) for converting the processed output signal into a user perceivable output signal, rechargeable battery connections adapted to receive a rechargeable battery (see column 7, lines 65-67 and column 8, lines 65-66) and operatively connected to battery charging means, and connecting means (*see internal coil inherently provided in Figure 5, for inductive coupling to external coil*) for releasable [inductive] connection to an external power source (63) to provide charging power for the rechargeable battery.

Bauman fails to clearly teach that the hearing prosthesis comprises memory means storing charging control information associated with charging the rechargeable battery.

REIPUR teaches a hearing prosthesis comprising memory means storing charging control information associated with charging the rechargeable battery (see "EEPROM" in Col 25:43-50, the "storage circuit" in Col. 26:12-15, the "Abstract" section, and Figures 26-28).

It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the device of Baumann, per the teachings of Reipur, for the purpose of optimizing charge or discharge to the battery in a manner which ensures full charge to the battery without cause of damage to said battery.

**Regarding claim 2,**

In column 25:43-50, Reipur teaches that said memory means comprise non-volatile memory means (see "EEPROM" of Col. 25:43-50).

**Regarding claim 3,**

Reipur teaches in Figures 26-28, that said memory (41) means are operatively connected to said data processor ("41" in figure 28, or "43" in figures 26-27).

**Regarding claim 4,**

In column 6, lines 60-63 and column 7, lines 10-22, Baumann teaches that the hearing device is provided with memory means arranged to contain instructions defining the predetermined processing algorithm.

**Regarding claim 5,**

In column 7, lines 25-40, Baumann teaches data communication means for releasably establishing data communication with an external unit.

**Regarding claim 6,**

Baumann teaches a hearing prosthesis according to claim 5. Reipur teaches that the memory means is arranged to communicate charging control information to the external unit by means of the data communication means (Figures 26-28), while Baumann teaches in Figure 5, that the prosthesis comprises connecting means (internal coil) for connecting an externally provided charging current (64) to the rechargeable battery connections.

**Regarding claim 7,**

Reipur teaches a hearing prosthesis according to claim 1, wherein the data processor ("41" in figures 26-28) is adapted to provide charging control instructions.

In Figures 5, REIPUR teaches a battery system wherein the data processor (7) of a charger (50) provides charging control instructions to control the operation of charging current regulator means (3) in accordance with the charging control information

(provided by the apparatus being charged, see microcontroller "41" in Figure 27) so as to control a charging cycle of the rechargeable battery.

**Regarding claim 8,**

Figure 5 of Baumann teaches that the prosthesis comprises connecting means (inductive coupling) for releasably connecting an externally provided charging current (64) to the rechargeable battery connections. While Reipur teaches a data processor ("7" in figure 5) arranged to communicate charging control instructions to the external unit by means of the data communication means.

**Regarding claim 9,**

The combined teachings of Bauman and Reipur teach a hearing prosthesis according to claim 1, comprising charging current regulator means ("3" in Reipur) and Bauman teaches connecting means (inductive coupling) for releasable connection of an external charging power supply to the charging current regulator (see Figure 28, wherein charging control circuitry is integrated into the apparatus being charged).

**Regarding claim 10,**

Reipur teaches that the memory means ("10" in figure 5) is arranged to communicate charging control information to the external unit by means of the data communication means (see Figures 28) and the charging current regulator means (3) is arranged to receive charging control instructions from the external unit i.e., power supply, by means of the data communication means.

**Regarding claim 11,**

Reipur teaches in column 24, lines 10-14, lines 32-35 and lines 46-48, that the charging current regulator means comprises a resistor and processor controllable switch element such as bipolar or MOS transistor.

**Regarding claim 12,**

In column 17, lines 58-59, Reipur teaches that the charging current regulator means comprises a pulse width modulator for controlling a magnitude of a charging current applied to the rechargeable battery.

**Regarding claim 13,**

In Figure 5, Reipur teaches means (10) for recurrently storing data related to the charging and de-charging of said rechargeable battery in said memory means.

**Regarding claim 14,**

Baumann teaches in Figure 5, a hearing prosthesis according to claim 1, a charger unit (63) having connection means (64) for establishing releasable [inductive] connection to the connection means (internal coil) of the hearing prosthesis and means for providing charging power via said connection means.

**Regarding claim 15,**

In Figure 5, Baumann teaches that the hearing prosthesis comprises data communication means (internal coil) for releasable establishing data communication with the charger unit (63), while Reipur teaches that the charger unit may comprises a

charger data communication means ("43" in figures 26 and 27) adapted to establish data communication with the data communication means of the hearing prosthesis.

**Regarding claim 16,**

In Figure 27, Reipur teaches a rechargeable hearing prosthesis system according to claim 15, wherein the data processor (41) of the hearing prosthesis is adapted to provide charging control instructions (43) to control the operation of charging current regulator means ("3" in Figure 5) in accordance with the charging control information and communicate said charging control instructions to the charger unit by means of the data communication means (see bidirectional data transmission lines in Figures 26-28), and the charger unit is adapted to receive the charging control instructions from the apparatus being charged (i.e., hearing prosthesis of Baumann) and provide a charging current to the hearing prosthesis via the charger unit connection means by means of a charging current regulator means ("3" in Figure 5) .

**Regarding claim 17,**

Baumann teaches a rechargeable hearing prosthesis system according to claim 15, while Reipur teaches that the hearing prosthesis may be adapted to transmit the charging control information to the charger unit by means of the data communication means. In Figures 26 and 27, Reipur teaches that the charger unit (42) is adapted to receive the charging control information from the device being charged (40), the charger unit comprising a charging current regulator ("3" in Figure 5 of Reipur) adapted to provide a charging current to the hearing prosthesis via the charger unit connection



means, and charging control means (8) adapted to control the operation of the charging current regulator means based on the received charging control information.

**Regarding claim 18,**

Figure 26 of Reipur teaches a rechargeable hearing prosthesis system according to claim 17, wherein the charging control means (8) of the charger (50) comprises a microprocessor adapted to control the charging current regulator means and/or the charger data communication means (see column 23, lines 57-60).

**Regarding claim 19,**

In column 25, lines 50-65, Reipur teaches a rechargeable hearing prosthesis system according to claim 17, wherein the charging control means (8) comprises a detection circuitry (600) for sensing whether or not a hearing prosthesis is connected to the charging circuitry.

**Regarding claim 21,**

Reipur teaches that the charger unit comprises DC voltage measuring circuitry for determining the DC voltage of a rechargeable battery of a hearing prosthesis connected thereto (see "abstract" lines 15-18), and the charging control means is adapted to control the charging procedure based on the measured DC voltage (see column 25, lines 66 – column 26, line 2).

**Regarding claim 22,**

In Figure 5, Bauman teaches a wireless charger unit (63) which will inherently comprise a battery compartment adapted for holding one or more batteries to power the charger unit during charging cycles of a hearing prosthesis connected thereto.

2. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bauman (US 6,807,445)** in view of **Reipur (US 6,075,339)** and further in view of the **Applicant's Admitted Prior Art (*the unchallenged Official Notice from the last Office Action*)**.

**Regarding claim 20,**

The combined disclosures of Baumann and Reipur do not clearly teach that the charging control means of the charger comprises a default charging procedure for charging the rechargeable battery of the hearing prosthesis in case invalid or no charging control information is received. However, the Examiner takes *Official Notice* that it is well known in the art and would have been obvious to incorporate a default charging procedure for recharging batteries wherein no parameter data is provided, thereby making the charging device useful in more general applications.

3. **Claim 23** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bauman (US 6,807,445)** in view of **Reipur (US 6,075,339)**, as applied to claim 15 above, and further in view of **Leysieffer (US 6,198,971)**.

**Regarding claim 23,**

Baumann and Reipur teach the hearing system according to claim 15. The combined disclosures of Baumann and Reipur do not clearly reach that the charger unit is adapted to reset the data processor of the hearing prosthesis.

LEYSIEFFER teaches, in column 8, lines 53-57, a hearing system similar to the device of Baumann wherein an external programming device (120) and charging device are integrated into a single housing. Therefore, the charger unit of Leysieffer may operate to alter or replace initial programming, reading on "adapted to reset the data processor of the hearing prosthesis by a command sent via the data communication means". It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Bauman, Reipur and Leysieffer, integrating the external programming device (120) and charging device into a single housing, as an alternative design choice, thereby providing a more compact system having fewer parts.

#### ***Response to Arguments***

4. Applicant's arguments with respect to claims rejected in the previous Office Action have been considered but are moot in view of the new ground(s) of rejection.

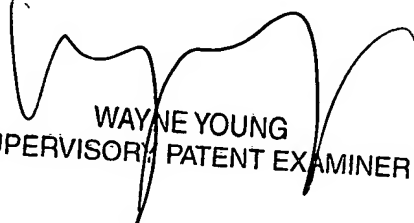
#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne H. Pendleton whose telephone number is 571-272-7497. The examiner can normally be reached on 10:30-7:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
D. Pendleton

  
WAYNE YOUNG  
SUPERVISOR, PATENT EXAMINER